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## SERIES 6A

# ELECTROPNEUMATIC POSITIONER

## QUICK START GUIDE



This document is not comprehensive, and is intended to help first time users become familiar with the Bray S6A Electropneumatic Positioner. For more detailed information the Installation, Operation and Maintenance Manual is available on the Bray website.



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**TABLE OF CONTENTS**

1.0	Mounting and Setup	3
2.0	Calibration	5

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## 1.0 MOUNTING AND SETUP

**Step 1** Place the mounting bracket on the underside of the positioner. Tighten the mounting bolts and lock washers.



**Step 2** Position the output shaft of the positioner so that the flat (1) portion is facing upwards.



**Step 3** Insert the coupler over the output shaft. Ensure proper alignment of the coupler's set screw with the flat side of the shaft before tightening the set screw.



**Step 4** Position the yellow indicator on the base of the coupler.



**1.0 MOUNTING AND SETUP (Continued)**

**Step 5** Position the positioner on the actuator and tighten the mounting screws.



**Step 6** Insert the pneumatic fittings on the positioner and actuator before inserting tubing into the outputs of the positioner to the inputs of the actuator.

**Note:** Supply air will be routed to Y1 in the event of a signal loss (fail condition.)

Single acting actuators release air from Y1 upon loss of signal.

For double-acting actuators, make sure Y1 is connected to the desired port for fail position.



**Step 7** Position the yellow 'Transmission Ratio Selector' tab (2) in the 90° position by pushing it away from the labeled side of the device.



**Step 8** Adjust the yellow clutch wheel (3) on the underside of the terminals using a 4 mm wide screwdriver to the 90° position.




## 2.0 CALIBRATION

**Step 1** Power on the unit with a 4 to 20 mA signal.

**Note:** Make sure signal does not order turn-off during calibration process.






**Step 2** Press the Menu Button  for >5 seconds to enter into Configuration mode.

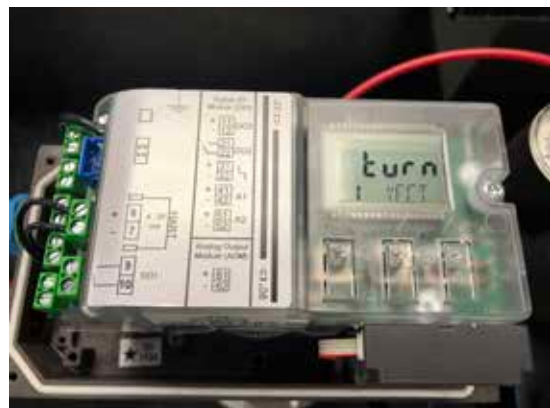


**Step 3** Once in Configuration mode parameter 1 is displayed in the bottom left hand corner of the positioner screen. Parameter 1 allows the user to select the type of actuator being paired with the device.




**Step 4** Use the Up Button  to scroll through the available options (in ascending order) until you reach “turn”. This option is for **quarter turn actuators**.

**Note:** To scroll through parameters in descending order, hold down the Menu Button  while using the Down Button  to scroll through the parameters until you find “turn”.



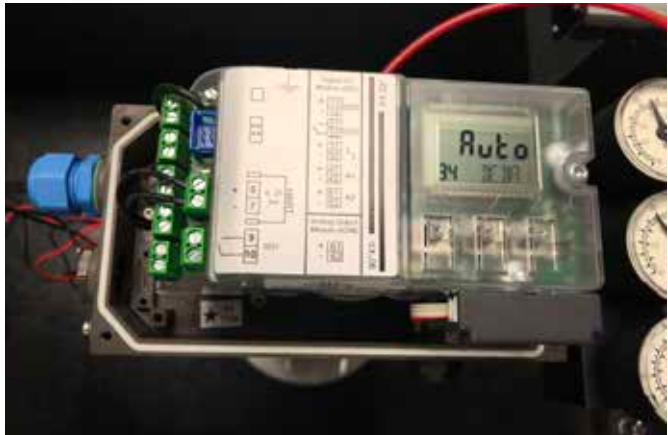



## 2.0 CALIBRATION (continued)

**Step 5** Press the Menu Button  once to reach parameter 2. Select 90°.

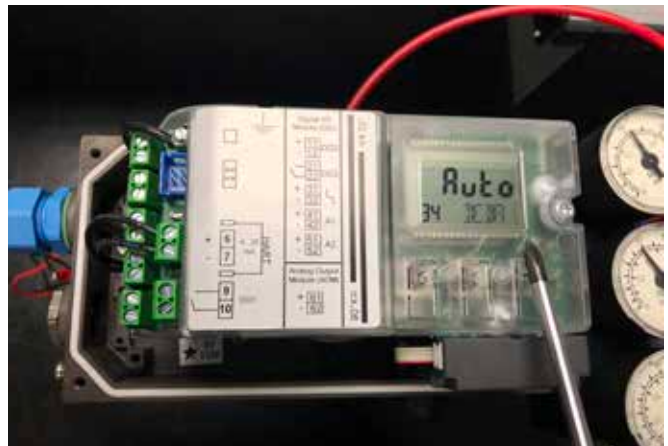


**Step 6** While in configuration mode, scroll to parameter 34 (DEBA).





**Step 7** Increase the deadband to reduce unnecessary valve hunting by pressing the Up Button. 

(Default is Auto; **Bray recommended value is 1 to 2%**).




**Step 8** This is an example of screen with increased deadband responsiveness.



**Step 9** Use the Menu Button  to scroll to parameter 39 (YCLS). This setting is used to drive the valve to its end positions while reducing unnecessary wear on the valve, actuator, and positioner. Select 'uP do' by pressing the Up Button.   
> uP - Only Upper Limit (Full Open)  
> do - Only Lower limit (Tight Close)  
> **uP do** - Upper and Lower limits set




**Step 10** Use the Menu Button  to scroll to parameter 40 (YCDO, tight close).



**Step 11** Change the parameter value to the desired lower limit for tight closing. (Default is 0.5%; **Bray recommended value is 5%**).

Example: If the positioner is at 10% travel or lower, the actuator drives the valve to the fully closed position.



**Step 12** Use the Menu Button  to scroll to parameter 41 (YCUP, full open).





**Step 13** Change the parameter to the desired upper limit for full open.

(Default is 99.5%; **Bray recommended value is 90-95%**)

**Example:** If the positioner is at 90% travel or higher, the actuator drives the valve to the fully open position.




**Step 14** Use the Menu Button  to scroll to parameter 52 (XDIAG). This setting allows users to activate the extended diagnostics functions and simultaneously the online diagnostics. Select **On2** by pressing the Up  Button.”

**Step 15** Press the Menu Button  to scroll to parameter 4.

Note: Parameter 3 is skipped for quarter-turn actuators.





**Step 16** Hold down the Up Button  until calibration begins (>5 seconds), then release. The device will now progress through 5 “RUNS”, completing a series of checks. For more information on the calibration, please refer to the product manual.

**Note:** The calibration routine can take up to 15 minutes.



**Step 17** Note: If an error is displayed on your positioner during Run 2, the lower tolerance (down tolerance) of the adjustment wheel has been exceeded. (If no errors are displayed, skip ahead to step 18.)



**Step 17a** Adjust the gray friction clutch adjustment wheel until the screen displays a 6 in the top right hand corner. If the clutch wheel is difficult to turn, ensure that:

- > The yellow locking wheel under the friction clutch adjustment wheel is not locked (rotate right)
- > The friction clutch adjustment wheel is not near the end of travel at either the high or low end (If so, rotate in the opposite direction to allow enough rotation to complete a successful calibration).




**Step 17b** Once the down tolerance error has been corrected, the middle character of the message line will change to an 'O'.




**Step 17c** To continue calibration, press the Up Button  once and release.





**Step 18** Upon successful completion of calibration, the status line will display "FINISH". Press the Menu Button  once to exit.




**Step 19** Step 9: Press the Menu Button  for 5 seconds. The device will now be in 'MANUAL' mode.



**Step 20** Step 10: Use the  or  buttons to manually close or open the valve to ensure that the desired travel limits are being attained.



**Step 21** Step 11: Toggle between Manual (“MAN”) and ‘AUTO’ mode by pressing the Menu Button .



**Step 22** Step 12: While in ‘AUTO’ mode, test the responsiveness of the device by varying the command signal from 4 mA to 20 mA.



**Step 23** Upon completion of calibration, insert a 4 mm wide screwdriver into the slot located under the adjustment wheel and turn the wheel left until you can feel that it clicks in. This helps prevent the clutch wheel from slipping during actuation.



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